

WE CLAIM

1. A radiant electric heater comprising at least first and second adjacent heating zones, the first heating zone including a first heating element portion and the second heating zone including a second heating element portion, and terminal means provided at a periphery of the heater for connecting the first and second heating element portions to a source of electrical energy, wherein the heating element portions are integral with conjoined ends connected to a first electrical connector, with one free end connected to a second electrical connector, and with another free end connected to a third electrical connector, the first, second and third electrical connectors including means for connecting to the heating element portions in such a way that the heating element portions are not deflected from their intended path to any substantial extent.

2. A heater as claimed in claim 1, wherein the heating element portions are in the form of a ribbon inserted upright into a base of thermal and electrical insulating material.

3. A heater as claimed in claim 1, wherein the heating element portions form a heating element in the form of a

double spiral, a first strand of the double spiral extending from a peripheral region of the heater to a central region thereof and a second strand of the double spiral extending from the central region to the peripheral region thereof.

4. A heater as claimed in claim 1, wherein the third electrical connector is positioned intermediate the first and second electrical connectors.

5. A heater as claimed in claim 4, wherein a radially inner region of each of the first and second electrical connectors extends generally circumferentially of the heater in a direction away from the terminal block.

6. A heater as claimed in claim 5, wherein the radially inner region of the first electrical connector extends substantially at 80 degrees to a portion thereof passing through the terminal block.

7. A heater as claimed in claim 4, wherein the radially inner portion of the second electrical connector extends substantially at 45 degrees to a portion thereof passing through the terminal block.

8. A heater as claimed in claim 4, wherein a radially inner region of the third electrical connector extends generally circumferentially of the heater in a direction towards one of the first and second electrical connectors.

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9. A heater as claimed in claim 8, wherein the radially inner portion of the third electrical connector includes a link element which passes across the region of the conjoined ends of the first and second heating element portions.

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10. A heater as claimed in claim 9, wherein the link element passes over the region of the conjoined ends of the first and second heating element portions.

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11. A heater as claimed in claim 10, wherein the link element passes under the region of the conjoined ends of the first and second heating element portions.

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12. A heater as claimed in claim 8, wherein the radially inner portion of the second electrical connector extends substantially at 45 degrees to a portion thereof passing through the terminal block.

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13. A heater as claimed in claim 4, wherein a radially inner region of the second electrical connector extends

generally circumferentially of the heater in a direction away from the terminal block.

14. A heater as claimed in claim 13, wherein the radially
5 inner portion of the second electrical connector extends substantially at 45 degrees to a portion thereof passing through the terminal block.

15. A heater as claimed in claim 13, wherein the radially
10 inner portion of the third electrical connector includes a link element which passes across the second heating element portion.

16. A heater as claimed in claim 13, wherein the radially
15 inner portion of the first electrical connector includes a link element which passes across the second heating element portion.

17. A heater as claimed in claim 3, wherein two second
20 heating element portions are provided, the two portions being electrically connected in parallel.

18. A heater as claimed in claim 17, wherein a conducting
link is provided between the first electrical connector and
25 the first and second strands of the double spiral in the

region of the junction between the first and second heating zones.

5 19. A heater as claimed in claim 18, wherein a further conducting link is provided between the third electrical connector and the first strand of the double spiral in the region of the junction between the first and second heating zones.

10 20. A heater as claimed in claim 19, wherein the first strand is severed between the first-mentioned and further conducting links.

15 21. A heater as claimed in claim 1, wherein the first electrical connector is positioned intermediate the second and third electrical connectors.

20 22. A heater as claimed in claim 21, wherein a radially inner region of each of the second and third electrical connectors extends generally circumferentially of the heater in a direction away from the terminal block.

25 23. A heater as claimed in claim 22, wherein the radially inner portion of the second electrical connector extends substantially at 45 degrees to a portion thereof passing through the terminal block.

24. A heater as claimed in claim 22, wherein the radially inner portion of the third electrical connector extends substantially at 45 degrees to a portion thereof passing through the terminal block.

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25. A heater as claimed in claims 22, wherein a radially inner region of the first electrical connector extends generally circumferentially of the heater in a direction towards one of the second and third electrical connectors.

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26. A heater as claimed in claim 25, wherein the radially inner region of the first electrical connector extends substantially at 80 degrees to a portion thereof passing through the terminal block.